

(19)



(11)

EP 3 297 789 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention of the grant of the patent:
10.11.2021 Bulletin 2021/45

(51) Int Cl.:
B24B 3/54 (2006.01) B24D 15/08 (2006.01)

(21) Application number: **16796841.1**

(86) International application number:
PCT/SE2016/050470

(22) Date of filing: **20.05.2016**

(87) International publication number:
WO 2016/186567 (24.11.2016 Gazette 2016/47)

(54) A GRINDER/POLISHER APPARATUS AND A GRINDING ELEMENT THEREFOR

SCHLEIF-/POLIERVORRICHTUNG UND SCHLEIFELEMENT DAFÜR

APPAREIL DE MEULEUSE/POLISSEUSE ET SON ÉLÉMENT DE MEULAGE

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

(73) Proprietor: **Eklund, Tore**
59194 Motala (SE)

(30) Priority: **21.05.2015 SE 1550652**

(72) Inventor: **Eklund, Tore**
59194 Motala (SE)

(43) Date of publication of application:
28.03.2018 Bulletin 2018/13

(56) References cited:
WO-A1-2009/134193 WO-A1-2015/030655
US-A- 4 624 079 US-A1- 2008 041 190
US-A1- 2013 065 494 US-B1- 6 168 509

EP 3 297 789 B1

Note: Within nine months of the publication of the mention of the grant of the European patent in the European Patent Bulletin, any person may give notice to the European Patent Office of opposition to that patent, in accordance with the Implementing Regulations. Notice of opposition shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

Description

TECHNICAL FIELD OF THE INVENTION

[0001] The present invention relates to a grinder apparatus of the type which comprises first and second sets of grinding elements facing each other under an angle, thus forming between the sets of grinding elements a V-groove in which the cutting edge of a knife is insertable for movement upon grinding, wherein the grinding elements are supported in holders. The invention further relates to the grinding element per se, which can be embodied with coarse or fine abrasive for grinding or polishing treatment of a knife edge.

BACKGROUND AND PRIOR ART

[0002] A similar grinder or polisher apparatus is previously known from WO 2015/030655, disclosing opposite sets of spaced apart grinding elements which engage in an overlapping relation to form a V-groove for insertion of the knife. The grinding elements are individually supported in holders and biased towards the center of the V-groove by separate springs. The V-groove this way adapts its depth to the orientation of the knife and a good result is achieved even if the knife is not moved strictly horizontally as seen in a vertical view.

[0003] Even though the grinder of WO 2015/030655 has some ability to adapt the V-groove to a knife which is not moved in an ideal straight path in the V-groove as seen in a horizontal view, the active area of contact between the knife and the grinding elements will be restricted to an edge region of the grinding elements if the knife is moved in a path that is non-parallel with the front faces of the grinding elements. This may lead to local wear-down of the grinding elements and reduced efficiency in the grinding or polishing treatment of the knife.

[0004] US 6,168,509 B1 solves the problem by fixing the knife at a predetermined angle through a guide-rod and clamp assembly. The knife is free to be drawn across and down the surface of the stone, one side of the blade at a time, but remains constrained at the predetermined angle throughout the sharpening process.

SUMMARY OF THE INVENTION

[0005] The present invention aims to provide an improved grinder/polisher apparatus for treating the cutting edge of a knife, which avoids the drawbacks and problems related to a non-straight orientation or non-linear motion of the knife in the V-groove, in the horizontal view.

[0006] The object is met in a grinder/polisher apparatus as defined by claim 1.

[0007] As used herein, the expression "the inclinations of which correspond with the opening angle of the V-groove" is aimed to specify the orientation of the pivot axes in relation to the grinding elements and the V-groove.

[0008] Obviously, the V-groove is defined by the abrasive front faces in the sets of grinding elements, the front faces forming the sloping sides of the V-groove. According to the invention, the grinding elements are pivotally arranged in a forward end of the holders (i.e. the end facing the V-groove) about axes that are parallel or nearly parallel to the front faces of the grinding elements. In other words, the pivot axes may be parallel or nearly parallel to the sides of the V-groove. Thus, if the inclinations of the pivot axes are changed it will affect the opening angle of the V-groove. The opening angle of the V-groove may be adjustable to adapt the grinder apparatus for treatment of differently angled knife cutting edges, whereby change of the V-groove angle can be accomplished by changing the position of the holders in the apparatus, this way changing the inclinations of the pivot axes and of the grinding elements accordingly.

[0009] However, a perfect alignment between the pivot axes and the front faces of the grinding elements may not always be critical and hence the relation can be defined as parallel or nearly parallel. The expression "correspond with" shall be understood to include embodiments wherein the pivot axes are parallel or nearly parallel with the sloping V-groove sides which are defined by the front faces of the grinding elements.

[0010] The grinding element has a grinding or polishing front face and a rear face comprising coupling means by which the grinding element is pivotally hinged to the holder. This embodiment is advantageously applied to press-shaped grinding elements.

[0011] The above-mentioned coupling means may be realized in the form of a ridge having a part-circular sectional profile that runs in the length direction of the grinding element, the ridge pivotally received in a corresponding profile of a groove formed in the forward end of the holder.

[0012] In this embodiment at least one of the rear face of the grinding element and the forward end of the holder can be formed with surfaces which are sloping at an obtuse angle from the ridge or from the groove respectively.

[0013] Another embodiment of the invention comprises a grinding element having a grinding or polishing front face and a rear face riding on a curved or partially circular forward end of the holder. This embodiment is advantageously applied to grinding elements formed from abrasive coated plate members.

[0014] In this latter embodiment the longitudinal sides of the grinding element are formed with a lug respectively which movably engages a recess formed in each side flank that adjoins the forward end of the holder, wherein the lug and recess in mutual engagement control a sideways tilting movement of the grinding element with respect to the holder. The lug and recess are extended the length of the grinding element.

[0015] In the apparatus, preferably, the grinding elements of the first or second sets of grinding elements are individually biased by separate springs towards the other set of grinding elements.

[0016] In analogy with the aforesaid the present invention further relates to a grinding element for a grinder/polisher apparatus according to claim 10.

[0017] In accordance with this second aspect of the present invention, the grinding element is characterized by being pivotally arranged in the holder about an axis the inclination of which corresponds with the inclination of the front face of the grinding element.

[0018] In one embodiment the grinding element is realized in the form of a press-shaped body having a planar or substantially planar front face, two sides connecting the front face with a rear face, and including a ridge having a part-circular sectional profile that protrudes above the rear face and runs along the longitudinal center of the rear face. In this embodiment the rear face is advantageously formed with two opposite surfaces which are sloping at an obtuse intermediate angle from the ridge towards the sides of the press-shaped body.

[0019] In another embodiment the grinding element is realized in the form of a plate member having a planar or substantially planar and abrasive coated front face, the longitudinal sides of the plate member swept back and inwards to produce engagement lugs extended the length of the plate member.

SHORT DESCRIPTION OF THE DRAWINGS

[0020] Further details and advantages of the invention will be explained below with reference made to the accompanying schematic drawings. In the drawings,

Fig. 1 is a partially broken away side view of a grinder/polisher apparatus to which the present invention can be applied,

Fig. 2 is a view from above showing the grinding elements pivotally adjusted to the non-straight orientation of a knife to be treated,

Fig. 3 is a cross-sectional view through a grinding element pivotally supported in a holder according to one embodiment of the invention, and

Fig. 4 is a corresponding cross-sectional view through a grinding element pivotally hinged to a holder according to another embodiment of the invention.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

[0021] The grinder or polisher apparatus 1 of Fig. 1 comprises first and second sets of grinding or polishing elements 2 and 3 facing each other under an angle α , thus forming between the sets of grinding elements a V-groove in which the cutting edge 4 of a knife is insertable for grinding in a back and forwards movement as seen in the horizontal view. The movement of the knife in the horizontal view is indicated through an arrow A in Fig. 2.

[0022] The grinding elements 2, 3 are supported in holders 5 and 6. The holders 5, 6 are journaled in blocks 7, 8 and movable in opposite directions as indicated through the arrows B. Springs 9 and 10 apply a biasing force to the holders and grinding elements towards the V-groove. The blocks 7, 8, the holders 5, 6 and the grinding elements 2, 3 are mounted on a base 11.

[0023] In this connection it shall be noted that the movement of the knife during grinding, thanks to the spring-biased mounting of the grinding elements, can be composed of both horizontal and vertical components of directions, such that the knife describes an oscillating motion when seen in a vertical view.

[0024] The grinder apparatus 1 may be arranged for adjustment of the opening angle α , if appropriate. To this purpose the grinding elements, holders and blocks may be journaled on a pivot 12 and associated with wedges 13 and 14 that control the angular position and intermediate angle α between the first and second sets of grinding elements.

[0025] The grinding elements 2, 3 are pivotally supported in the respective holders 5 and 6. More precisely, the grinding elements are arranged for pivoting movement about axes R and R' which follow the directions of the front faces 15 of the subject grinding elements. In other words, the pivot axes R, R' follow the directions of the sloping sides of the V-groove, which are defined respectively through the front faces of the grinding elements in the subject set of grinding elements.

[0026] The pivotal mounting of the grinding elements in the holders permit the grinding apparatus to adapt to a knife which is not rectilinearly inserted in the V-groove. As illustrated in Fig. 2, the pivotally supported grinding elements adjust their position with respect to the knife's orientation such that full contact with the active abrasive portions of the grinding elements, in Fig. 2 indicated through shadowed areas in the front faces 15, can be achieved throughout the grinding procedure.

[0027] The invention can be realized in several embodiments.

[0028] In one embodiment shown in Fig. 3 the grinding element comprises a plate member 16 with an abrasive coating 17 applied to its substantially planar front face. The plate member 16 is an elongate element, wherein the longitudinal sides are swept back and inwards to produce engagement lugs 18 which extend the whole length of the grinding element. The lugs 18 are movably received in recesses 19 which are formed in the opposite sides that adjoin the forward end 20 of the holder. The lugs 18 and recesses 19 in mutual engagement limit a sideways tilting movement of the grinding element, which rests with its rear face 21 against the curved forward end of the holder. The lugs 18, recesses 19 and the forward end 20 of the holder may be circular in shape as illustrated to permit the grinding element a pivoting movement about the pivot axis R (R') with respect to the holder. The embodiment of Fig. 3 may comprise a metal plate coated with an abrasive material, or a shaped plastic plate which

is metallized and then coated with an abrasive material, such as diamond e.g.

[0029] In another embodiment shown in Fig. 4 the grinding element is a press-shaped body 22 having a planar or substantially planar front, two sides 23 and 24 connecting the front face with a rear face 25. A ridge 26 which partially has a circular sectional profile protrudes above the rear face and runs centrally along the rear face 25. The ridge 26 is pivotally received in a groove 27 of corresponding sectional profile, the groove 27 opening towards the body in the forward end 28 of the holder. In mutual engagement, the ridge 26 and the groove 27 provide a coupling means 26, 27 through which the body is hinged to the holder for pivoting movement about the pivot axis R (R'). At least one of the rear face 25 and the forward end 28 of the holder comprises surfaces which are sloping from the ridge or groove respectively, at an obtuse angle β , in order to permit a sideways tilting movement of the grinding element relative to the holder. The embodiment of Fig. 4 may comprise a press-shaped ceramic or powder-metallic body, e.g.

[0030] The individually pivoting grinding elements of the present invention, as well as the individually spring biased grinding elements of prior art, are each examples of advantageous improvements in grinder/polisher apparatuses intended for the treatment of a knife's cutting edge. Simultaneously applied these features provide a combination which is extremely forgiving in respect of the orientation of the knife during grinding.

Claims

1. A grinder/polisher apparatus comprising first and second sets of grinding elements (2, 3) facing each other under an angle (α) and spaced apart in overlapping relation so as to form a V-groove between the sets of grinding elements in which the cutting edge (4) of a knife is insertable for grinding in a back and forward movement (A) upon grinding, wherein the grinding elements (2, 3) are supported in holders (5, 6) that are movable in opposite directions (B) and biased by springs (9, 10) towards the V-groove, and wherein the grinding elements (2,3) have grinding front faces (15), **characterized in that** the grinding elements (2, 3) have rear faces (25) comprising coupling means (26, 27) by which the grinding elements are pivotally hinged to the holders (5, 6) about axes (R, R') the inclinations of which correspond with the opening angle (α) of the V-groove, and wherein said coupling means comprises a ridge (26) which partially has a circular sectional profile protruding above the rear face and running centrally along the rear face (25) of the grinding element (22), or comprising engagement lugs (18), circular in shape, and extending the whole length of the grinding element (16).
2. The apparatus of claim 1, wherein the coupling means is a ridge (26) with a partially circular sectional profile running in the length direction on the rear face of the grinding element, the ridge pivotally received in a groove (27) of corresponding sectional profile formed in a forward end (28) of the holder (5, 6).
3. The apparatus of claim 2, wherein at least one of the rear face (25) of the grinding element and the forward end (28) of the holder is formed with surfaces which are sloping at an obtuse angle (β) away from the ridge (26) or from the groove (27) respectively.
4. The apparatus of any of claims 2-3, wherein the grinding element is a press-shaped body (22).
5. The apparatus of claim 1, wherein the grinding element has a grinding front face (15) and a rear face (21) supported against a curved or partially circular forward end (20) of the holder.
6. The apparatus of claim 5, wherein longitudinal sides of the grinding element are formed with a lug (18) respectively which movably engages a recess (19) formed in each side flank that adjoins the forward end (20) of the holder, wherein the lug (18) and recess (19) in mutual engagement control a sideways tilting movement of the grinding element with respect to the holder.
7. The apparatus of claim 6, wherein the lug (18) and recess (19) are extended the length of the grinding element.
8. The apparatus of any of claims 5-7, wherein the grinding element is an abrasive coated plate member (16).
9. The apparatus of any previous claim wherein the grinding elements (2, 3) in a set of grinding elements are individually biased by springs (9, 10) towards the grinding elements (2, 3) of the opposite set of grinding elements.
10. A grinding element (2, 3), for a grinder/polisher apparatus that comprises first and second sets of grinding elements facing each other under an angle (α) and spaced apart in overlapping relation so as to form a V-groove between front faces (15) of the grinding elements in which the cutting edge (4) of a knife is insertable for grinding in a back and forward movement (A) upon grinding, wherein the grinding element (2, 3) is supported in a holder (5, 6) that is movable in opposite directions (B) and biased by a spring (9, 10) towards the V-groove, and wherein the grinding element (2,3) has a grinding front face (15), **characterized in that** the grinding element (2, 3) has a rear face (25) comprising coupling means (26,

27) by which the grinding element is pivotally connected to the holder (5, 6) about an axis (R, R') that is parallel or nearly parallel to the front face (15) of the grinding element (2, 3), wherein said coupling means comprises a ridge (26) which partially has a circular sectional profile protruding above the rear face and running centrally along the rear face (25) of the grinding element (22), or comprising engagement lugs (18), circular in shape, and extending the whole length of the grinding element (16).

11. The grinding element of claim 10, wherein the coupling means comprises said ridge (26) and the grinding element further comprises a press-shaped body (22) having a planar or substantially planar front face (15), two sides (23, 24) connecting the front face with a rear face (25), a ridge (26) which has a partially circular sectional profile that protrudes above the rear face and runs along a longitudinal center of the rear face.
12. The grinding element of claim 11, wherein the rear face comprises two surfaces sloping at an obtuse intermediate angle (β) away from the ridge (26) towards the sides of the press-shaped body (22).
13. The grinding element of claim 10, wherein the coupling means comprises said engagement lugs (18) and the grinding element further comprises a plate member (16) having a planar or substantially planar and abrasive coated front face (15), wherein sides of the plate member are bent back and inwards to produce engagement lugs (18) extended the length of the plate member.

Patentansprüche

1. Schleif-/Poliereinrichtung, die einen ersten und einen zweiten Satz von Schleifelementen (2, 3) umfasst, die einander mit einem Winkel (α) zugewandt und in überlappender Beziehung derart beabstandet sind, dass sie eine V-Nut zwischen den Sätzen von Schleifelementen bilden, in die die Schneidkante (4) einer Klinge zum Schleifen in einer Rückwärts- und Vorwärtsbewegung (A) beim Schleifen einsetzbar ist, wobei die Schleifelemente (2, 3) in Halterungen (5, 6) derart getragen werden, dass sie in entgegengesetzte Richtungen (B) bewegbar und von Federn (9, 10) zu der V-Nut vorgespannt sind, und wobei die Schleifelemente (2, 3) Schleifvorderflächen (15) aufweisen,
dadurch gekennzeichnet, dass die Schleifelemente (2, 3) Rückseitenflächen (25) aufweisen, die ein Kopplungsmittel (26, 27) umfassen, durch das die Schleifelemente schwenkbar an den Halterungen (5, 6) um Achsen (R, R') angelenkt sind, deren Neigungen mit dem Öffnungswinkel (α) der V-Nut überein-

stimmen, und wobei das Kopplungsmittel eine Rippe (26) aufweist, die teilweise ein kreisförmiges Teilabschnittprofil aufweist, das über der Rückseitenfläche vorragt und zentral entlang der Rückseitenfläche (25) des Schleifelements (22) verläuft, oder Eingriffsansätze (18), die kreisförmig sind, umfassen, und die sich über die gesamte Länge des Schleifelements (16) erstrecken.

2. Einrichtung nach Anspruch 1, wobei das Kopplungsmittel eine Rippe (26) mit einem teilweise kreisförmigen Teilabschnittprofil ist, die in die Längsrichtung der Rückseitenfläche des Schleifelements verläuft, wobei die Rippe schwenkbar in einer Nut (27) des entsprechenden Teilabschnittprofils, das in einem Vorderende (28) der Halterung (5, 6) gebildet ist, aufgenommen ist.
3. Einrichtung nach Anspruch 2, wobei mindestens eine der Rückseitenfläche (25) des Schleifelements und des Vorderendes (28) der Halterung mit Oberflächen gebildet ist, die sich jeweils mit einem stumpfen Winkel (β) von der Rippe (26) oder von der Nut (27) weg neigen.
4. Einrichtung nach einem der Ansprüche 2-3, wobei das Schleifelement ein pressgeformter Körper (22) ist.
5. Einrichtung nach Anspruch 1, wobei das Schleifelement eine Schleifvorderfläche (15) und eine Rückseitenfläche (21) umfasst, die gegen ein gekrümmtes oder teilweise kreisförmiges Vorderende (20) der Halterung gestützt ist.
6. Einrichtung nach Anspruch 5, wobei Längsseiten des Schleifelements jeweils mit einem Ansatz (18) gebildet sind, der bewegbar in eine Vertiefung (19) eingreift, die in jeder Seitenflanke gebildet ist, die an das Vorderende (20) der Halterung anstößt, wobei der Ansatz (18) und die Vertiefung (19) in gegenseitigem Eingriff eine seitliche Kippbewegung des Schleifelements in Bezug zu der Halterung steuern.
7. Einrichtung nach Anspruch 6, wobei sich der Ansatz (18) und die Vertiefung (19) entlang des Schleifelements erstrecken.
8. Einrichtung nach einem der Ansprüche 5 bis 7, wobei das Schleifelement ein mit einem Schleifmittel beschichtetes Plattenelement (16) ist.
9. Einrichtung nach einem vorstehenden Anspruch, wobei die Schleifelemente (2, 3) in einem Satz von Schleifelementen individuell von Federn (9, 10) zu den Schleifelementen (2, 3) des entgegengesetzten Satzes von Schleifelementen vorgespannt sind.

10. Schleifelement (2, 3), für eine Schleif-/Poliereinrichtung, die einen ersten und einen zweiten Satz von Schleifelementen umfasst, die einander mit einem Winkel (α) zugewandt und in überlappender Beziehung derart beabstandet sind, dass eine V-Nut zwischen Vorderflächen (15) der Schleifelemente gebildet ist, in die die Schneidkante (4) einer Klinge zum Schleifen in einer Rückwärts- und Vorwärtsbewegung (A) beim Schleifen einsetzbar ist, wobei das Schleifelement (2, 3) in einer Halterung (5, 6) getragen wird, die in entgegengesetzte Richtungen (B) bewegbar und von einer Feder (9, 10) zu der V-Nut vorgespannt ist, und wobei das Schleifelement (2, 3) eine Schleifvorderfläche (15) aufweist, **dadurch gekennzeichnet, dass** das Schleifelement (2, 3) eine Rückseitenfläche (25) aufweist, die Kopplungsmittel (26, 27) umfasst, von welchen das Schleifelement mit der Halterung (5, 6) um eine Achse (R, R') schwenkbar verbunden ist, die zu der Vorderfläche (15) des Schleifelements (2, 3) parallel oder nahezu parallel ist, wobei das Kopplungsmittel eine Rippe (26) umfasst, die teilweise ein kreisförmiges Teilabschnittprofil aufweist, das über der Rückseitenfläche vorragt und zentral entlang der Rückseitenfläche (25) des Schleifelements (22) verläuft, oder Eingriffsansätze (18) umfasst, die kreisförmig sind und sich über die gesamte Länge des Schleifelements (16) erstrecken.
11. Schleifelement nach Anspruch 10, wobei das Kopplungsmittel die Rippe (26) umfasst, und das Schleifelement weiter einen pressgeformten Körper (22) umfasst, der eine planare oder im Wesentlichen planare Vorderfläche (15) aufweist, zwei Seiten (23, 24), die die Vorderfläche mit einer Rückseitenfläche (25) verbinden, eine Rippe (26), die ein teilweises kreisförmiges Teilabschnittprofil aufweist, das über der Rückseitenfläche vorragt und entlang der Längsmittlinie der Rückseitenfläche verläuft.
12. Schleifelement nach Anspruch 11, wobei die Rückseitenfläche zwei Oberflächen umfasst, die sich mit einem stumpfen Zwischenwinkel (β) von der Rippe (26) zu den Seiten des kreisförmigen Körpers (22) weg neigen.
13. Schleifelement nach Anspruch 10, wobei das Kopplungsmittel die Eingriffsansätze (18) umfasst, und das Schleifelement weiter ein Plattenelement (16) umfasst, das eine planare oder im Wesentlichen planare und mit Schleifmittel beschichtete Vorderfläche (15) aufweist, wobei Seiten des Plattenelements nach hinten und innen gebogen sind, um Eingriffsansätze (18), die sich über die Länge des Plattenelements erstrecken, zu erzeugen.

Revendications

- Appareil de meuleuse/polisseuse comprenant des premier et second ensembles d'éléments de meulage (2, 3) l'un en face de l'autre sous un angle (α) et espacés selon une relation de chevauchement de manière à former une rainure en V entre les ensembles d'éléments de meulage dans laquelle le bord de coupe (4) d'un couteau peut être inséré à des fins de meulage dans un mouvement d'avant en arrière (A) lors d'un meulage, dans lequel les éléments de meulage (2, 3) sont supportés dans des supports (5, 6) qui sont mobiles dans des directions opposées (B) et sollicités par des ressorts (9, 10) vers la rainure en V, et dans lequel les éléments de meulage (2, 3) présentent des faces avant de meulage (15), **caractérisé en ce que** les éléments de meulage (2, 3) présentent des faces arrière (25) comprenant un moyen d'accouplement (26, 27) par lequel les éléments de meulage sont articulés de manière pivotante sur les supports (5, 6) autour d'axes (R, R') dont les inclinaisons correspondent à l'angle d'ouverture (α) de la rainure en V, et dans lequel ledit moyen d'accouplement comprend une arête (26) qui présente partiellement un profil circulaire en coupe faisant saillie au-dessus de la face arrière et s'étendant de manière centrale le long de la face arrière (25) de l'élément de meulage (22), ou comprenant des pattes d'engagement (18), de forme circulaire, et s'étendant sur la longueur entière de l'élément de meulage (16).
- Appareil selon la revendication 1, dans lequel le moyen d'accouplement est une arête (26) ayant un profil en coupe partiellement circulaire s'étendant dans la direction de la longueur sur la face arrière de l'élément de meulage, l'arête étant reçue de manière pivotante dans une rainure (27) de profil en coupe correspondant formée dans une extrémité avant (28) du support (5, 6).
- Appareil selon la revendication 2, dans lequel au moins l'une de la face arrière (25) de l'élément de meulage et de l'extrémité avant (28) du support est formée avec des surfaces qui sont inclinées selon un angle obtus (β) à l'écart de l'arête (26) ou de la rainure (27) respectivement.
- Appareil selon l'une quelconque des revendications 2-3, dans lequel l'élément de meulage est un corps en forme de presse (22).
- Appareil selon la revendication 1, dans lequel l'élément de meulage présente une face avant de meulage (15) et une face arrière (21) supportée contre une extrémité avant (20) incurvée ou partiellement circulaire du support.

6. Appareil selon la revendication 5, dans lequel les côtés longitudinaux de l'élément de meulage sont formés avec une patte (18) respectivement qui s'engage de manière mobile dans un évidement (19) formé dans chaque flanc latéral qui jouxte l'extrémité avant (20) du support, dans lequel la patte (18) et l'évidement (19) en engagement mutuel commandent un mouvement latéral d'inclinaison de l'élément de meulage par rapport au support. 5
7. Appareil selon la revendication 6, dans lequel la patte (18) et l'évidement (19) s'étendent sur la longueur de l'élément de meulage. 10
8. Appareil selon l'une quelconque des revendications 5-7, dans lequel l'élément de meulage est un élément de plaque revêtue d'abrasif (16). 15
9. Appareil selon une quelconque revendication précédente, dans lequel les éléments de meulage (2, 3) dans un ensemble d'éléments de meulage sont individuellement sollicités par des ressorts (9, 10) vers les éléments de meulage (2, 3) de l'ensemble opposé d'éléments de meulage. 20
10. Élément de meulage (2, 3), pour un appareil de meuleuse/polisseuse qui comprend des premier et second ensembles d'éléments de meulage l'un en face de l'autre sous un angle (α) et espacés selon une relation de chevauchement de manière à former une rainure en V entre les faces avant (15) des éléments de meulage dans laquelle le bord de coupe (4) d'un couteau peut être inséré à des fins de meulage dans un mouvement d'avant en arrière (A) lors d'un meulage, dans lequel l'élément de meulage (2, 3) est supporté dans un support (5, 6) qui est mobile dans des directions opposées (B) et sollicité par un ressort (9, 10) vers la rainure en V, et dans lequel l'élément de meulage (2, 3) présente une face avant de meulage (15), 25
- caractérisé en ce que** l'élément de meulage (2, 3) présente une face arrière (25) comprenant un moyen d'accouplement (26, 27) par lequel l'élément de meulage est raccordé de manière pivotante au support (5, 6) autour d'un axe (R, R') qui est parallèle ou presque parallèle à la face avant (15) de l'élément de meulage (2, 3), dans lequel ledit moyen d'accouplement comprend une arête (26) qui présente partiellement un profil circulaire en coupe faisant saillie au-dessus de la face arrière et s'étendant de manière centrale le long de la face arrière (25) de l'élément de meulage (22), ou comprenant des pattes d'engagement (18), de forme circulaire, et s'étendant sur la longueur entière de l'élément de meulage (16). 30
11. Élément de meulage selon la revendication 10, dans lequel le moyen d'accouplement comprend ladite arête (26) et l'élément de meulage comprend en 35
12. Élément de meulage selon la revendication 11, dans lequel la face arrière comprend deux surfaces inclinées selon un angle intermédiaire obtus (β) à l'écart de l'arête (26) vers les côtés du corps en forme de presse (22). 40
13. Élément de meulage selon la revendication 10, dans lequel le moyen d'accouplement comprend lesdites pattes d'engagement (18) et l'élément de meulage comprend en outre un élément de plaque (16) présentant une face avant (15) plane ou sensiblement plane et revêtue d'abrasif, dans lequel les côtés de l'élément de plaque sont repliés vers l'arrière et vers l'intérieur pour produire des pattes d'engagement (18) s'étendant sur la longueur de l'élément de plaque. 45
- 50
- 55

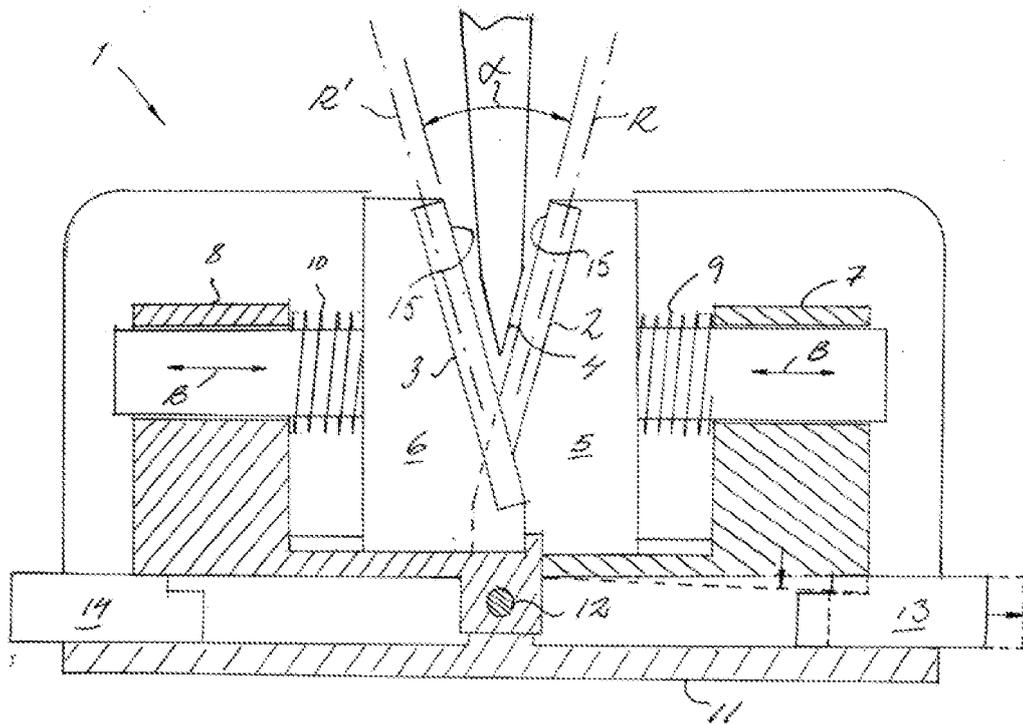


Fig. 1

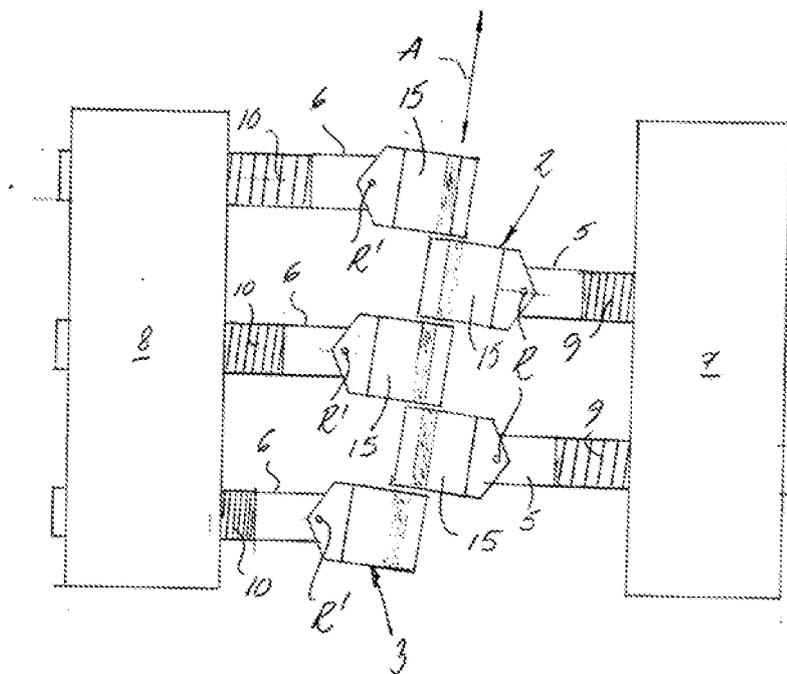


Fig. 2

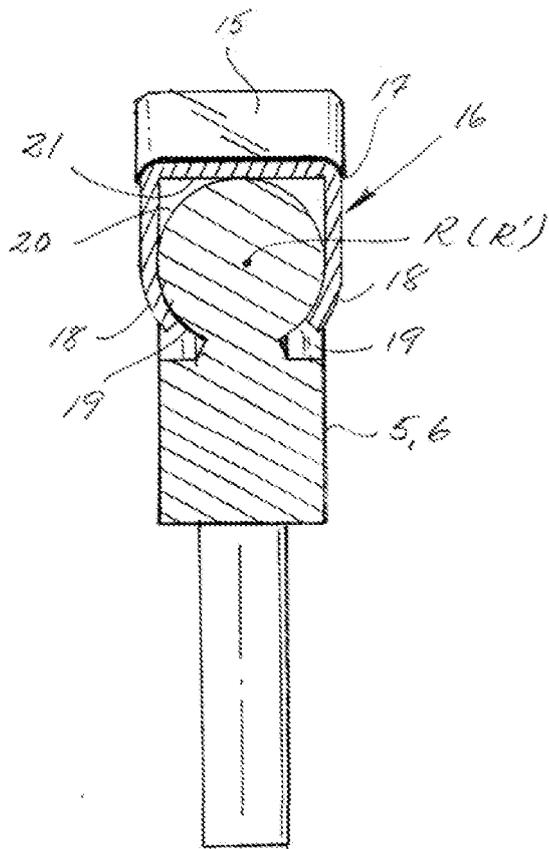


Fig. 3

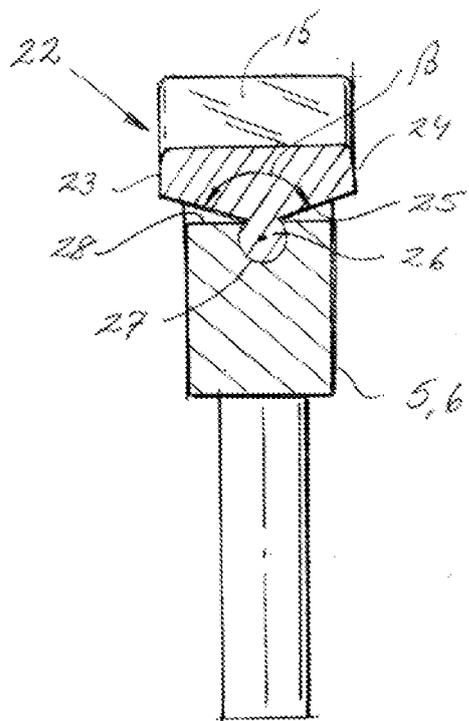


Fig. 4

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- WO 2015030655 A [0002] [0003]
- US 6168509 B1 [0004]